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F. APPLICATION OF THE ARBITRAGE RESTRICTIONS: AN EXAMPLE

by
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The 1994 CPE Book presented an introductory guide to the arbitrage restrictions of the Internal Revenue Code and the Income Tax Regulations. With that as a foundation, this article illustrates a practical application of the arbitrage restrictions to a specific example. Its purpose is to show the reader how to perform an arbitrage analysis under section 148 for a municipal financing transaction.

1. Introduction

For interest on a bond of a state or local government to be excluded from gross income, section 103 requires compliance with both the yield restriction rules and the rebate rules of section 148, collectively known as the "arbitrage restrictions." Accordingly, compliance with section 103 cannot be determined without understanding the arbitrage restrictions. This article helps the reader gain that understanding through a step-by-step analysis of a specific transaction.

Part 2 of the article sets forth the facts of the example. The analysis is presented in Parts 3 and 4 of the article. To make the article more instructional, some facts often found in municipal financing transactions have been either simplified or eliminated. For instance, revenue bonds for new construction usually provide for capitalized interest so that debt service on the bonds can be paid during construction. Eliminating capitalized interest simplifies the example so that other, more basic principles are not obscured. Also, no premium is paid when the term bond is called prior to maturity. Consequently, while the example illustrates aspects of many varieties of transactions, it does not precisely illustrate a typical financing transaction.

Part 3 applies the yield restriction rules to the example. It shows how to answer the question: Can arbitrage be earned in this case without forfeiting the exclusion under section 103? This part highlights the importance of reasonable expectations, permitted spread, and yield. It shows how to allocate and account for a bond issue's gross proceeds, investments, and expenditures, and it also shows how to compute the yield on an issue of bonds. Some concepts of the yield restriction rules are briefly explained, but the reader is encouraged to review the article in the 1994 CPE Book for more complete explanations.

Part 4 applies the rebate rules to the example. It shows how to answer the question: Even if arbitrage can be earned under the yield restriction rules, can it be retained in this case without forfeiting the exclusion under section 103 or must it instead be paid (rebated) to the federal government? This part highlights the importance of actual cash flows rather than expected cash flows. It shows that, although some of the rebate rules are similar to the yield restriction rules, the requirement to rebate arbitrage is separate from the requirement to restrict yield. It also shows how to compute rebate using the future value method under the regulations. Again, some concepts of the rebate rules are briefly explained, but the reader is encouraged to review the article in the 1994 CPE Book for more complete explanations.

Before moving to the example itself, a few warnings are in order. First, this article is a tool for understanding certain arbitrage restrictions. It shows how to analyze one very specific example, but it is not an attempt to set forth audit guidelines. An agent who precisely follows only the steps in this article during an actual examination will certainly miss issues in that examination.

Second, the example assumes that all the bond documents, such as the official statement, accurately reflect the underlying facts. For example, no modifications of the terms of the bonds occur after the bonds are issued. Therefore, this article does not explore the circumstances requiring an agent to look beyond the bond documents.

Third, unlike some of the targeted initiatives described in the 1995 CPE Book, the example does not illustrate an abusive transaction. During an actual examination, an agent should be continually mindful of the anti-abuse rules of the regulations, which can modify the application of other rules in the regulations.

Fourth, the article emphasizes the current statute and regulations under section 148. Different sets of regulations have been issued under section 148, and those regulations have different effective dates and transition rules. Under section 1.148-11, the regulations issued in 1993 generally apply to bonds issued after June 30, 1993. In addition, certain temporary regulations were issued in 1994 and generally apply to bonds issued after June 6, 1994. Because the bonds in this example are issued in 1995, no transition rules apply. During an actual examination, it is essential to determine first which set of regulations applies.

Finally, this article addresses only one condition for interest exclusion under section 103. Other related provisions are contained in sections 103, 141 through 147, and 149 and are not addressed here.

2. Facts of the Example

As set forth in greater detail below, the facts of the example involve City issuing bonds to finance improvements to a water plant facility. Some of the facts relevant for arbitrage purposes would be known when City issues its bonds while others would only be known after the bonds are issued. The facts known at issuance relate to the terms of the bonds, the expected use of the funds raised by the sale of the bonds, and the expected investment of those funds pending expenditure. The subsequent facts relate to the issuance of the bonds and the actual investment and expenditure of funds raised by the sale of the bonds. The facts are presented below in that order.

A. Terms of the Bonds

City, a political subdivision within the meaning of section 103(c)(1) and section 1.103-1(a), intends to issue bonds to finance capital improvements to a water plant facility that is governmentally owned and operated. The terms of the bonds are reflected on the first page of the official statement, a copy of which is found as Appendix A. The official statement provides, among other things, the date of issuance, the amount of bonds issued, the maturity of the bonds, the interest rate, the interest payment dates, the offering price, and the source of repayment.

The first page of the official statement provides that the bonds were issued on April 15, 1995, two weeks after the date used to calculate the first interest payments on the bonds.

The total par amount of the bonds issued is $100,000,000.00, comprised of eight serial bonds and one term bond.[1] All the bonds are offered in $5,000.00 denominations.

The serial bonds and the term bond have different maturity dates. A serial bond matures every year on April 1 with the last serial bond maturing on April 1, 2003. The term bond matures in 20 years on April 1, 2015, but requires mandatory sinking fund redemptions.[2] Which of the term bond holders will have their $5,000.00 obligation retired on any particular sinking fund redemption date will be determined by lottery. The principal of the term bond will be paid as follows:

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[1] Although we refer to "term bond" in the singular, it is actually a group of identical obligations.

[2] Term bonds that require mandatory sinking fund redemptions often are called "sinking fund bonds" or "sinkers."

TABLE 1
Term Bond Mandatory Redemption Schedule

Maturity date	Principal amount
April 1, 2004	$ 4,160,000.00
April 1, 2005	4,455,000.00
April 1, 2006	4,765,000.00
April 1, 2007	5,100,000.00
April 1, 2008	5,455,000.00
April 1, 2009	5,835,000.00
April 1, 2010	6,245,000.00
April 1, 2011	6,685,000.00
April 1, 2012	7,150,000.00
April 1, 2013	7,650,000.00
April 1, 2014	8,185,000.00
April 1, 2015	8,760,000.00
	$74,445,000.00

However, City may call the term bond on any interest payment date after April 1, 2003.

Each of the bonds pays a fixed, stated rate of interest. Interest is payable semi-annually on April 1 and October 1 of each year the bonds are outstanding and is computed on a 30/360 day count basis. The first interest payment date is October 1, 1995.

The term bond and the serial bonds pay different amounts of interest. The term bond pays 7 percent interest annually. The stated interest rate on the eight serial bonds differs for each maturity as follows:

TABLE 2
Serial Bonds Interest Rate Schedule

Maturity date	Principal amount	Annual Interest rate
April 1, 1996	$ 2,540,000.00	5.000%
April 1, 1997	2,770,000.00	5.250%
April 1, 1998	2,915,000.00	5.500%
April 1, 1999	3,075,000.00	5.750%
April 1, 2000	3,250,000.00	6.000%
April 1, 2001	3,445,000.00	6.250%
April 1, 2002	3,660,000.00	6.500%
April 1, 2003	3,900,000.00	6.750%
	$25,555,000.00	

All the bonds are payable solely from revenues generated by the water plant facility, except that City purchases bond insurance for the term bond. The cost of the bond insurance is $770,808.50. City purchases the term bond insurance because it reasonably expects that debt service savings will exceed the cost of the insurance.

Finally, under the bond documents, City will establish a debt service fund into which it will make monthly deposits from its revenues generated by the water plant facility equal to one-sixth of the next semiannual interest payment plus one-twelfth of the next annual principal payment. City must deplete this fund at least once each bond year, except for a reasonable carryover amount not to exceed the greater of (1) the earnings on the fund for the immediately preceding bond year, or (2) one-twelfth of the principal and interest payments on the issue for the immediately preceding bond year.

B. Expected Use of Funds Raised by the Sale of the Bonds

City expects to use the amounts derived from issuing the bonds to fund a construction fund, to fund a reserve fund, and to reimburse itself for a prior expenditure.

City intends to deposit approximately $88,700,000.00 into the construction fund. This amount plus investment earnings of the construction fund will be used to pay the cost of improving the water plant facility. No amount will be used for working capital items. As part of improving the facility, City will acquire land that will cost $5,000,000.00.

City intends to proceed with due diligence to make the improvements to the water plant facility. City reasonably expects to complete the improvements in 3 years and to pay the costs when, and as, construction of the improvements progresses. City has already entered into binding agreements with third parties for more than $5,000,000.00 of construction costs.

City expects to fund the reserve fund with a deposit of approximately $9,300,000.00. The reserve fund will be used to pay debt service on the bonds should City encounter any financial difficulty that would prevent it from doing so. The bond documents state that earnings on investments in the reserve fund will be deposited into the construction fund until the improvements to the water plant facility are complete. After the improvements have been completed, those earnings will be deposited into the debt service fund. Finally, the bond documents require that the balance of the reserve fund be the least of (1) 10 percent of the bond proceeds, (2) the maximum annual debt service on the bonds, or (3) 125 percent of average annual adjusted debt service on the bonds.

City intends to reimburse itself for costs totaling $10,000,000.00. This amount is expected to come from the amount deposited in the construction fund. These costs reflect amounts paid on February 1, 1995, for construction materials and equipment. On March 1, 1995, City passed a resolution stating that it planned to reimburse itself for these previously incurred costs. The resolution generally describes the improvements to the water plant facility. It states that the maximum principal amount of the obligations expected to be issued for the project is $100,000,000.00 and that the previously incurred costs were paid from the "Water Plant Facility Fund -- Water Plant Facility Capital Improvement Program."

C. Expected Investments of Funds Raised by the Bonds

City expects to invest the construction fund in a taxable, widely-held mutual fund and expects to invest the reserve fund in short-term United States Treasury securities. City will provide an arbitrage certificate, stating the facts and estimates that form the basis for City's determination that the bonds comply with the arbitrage restrictions. The certificate will be included in the bond documents.

D. Issuance of Bonds

Assume that City actually sells the bonds on March 15, 1995, and issues them on April 15, 1995, substantially as planned. Upon issuance, a number of significant cash flows are determined.

First, the initial offering price of the bonds to the public is determined. The bonds are offered and sold to the public for an aggregate amount of $100,224,006.81. This aggregate amount is the sum of the prices for each bond ($99,962,200.00) plus accrued interest ($261,806.81). The price for each bond is as follows:

TABLE 3
Bond Price Schedule

Maturity date	Principal amount	Interest rate	Price
April 1, 1996	$ 2,540,000.00	5.000%	$ 2,540,000.00
April 1, 1997	2,770,000.00	5.250%	2,770,000.00
April 1, 1998	2,915,000.00	5.500%	2,915,000.00
April 1, 1999	3,075,000.00	5.750%	3,075,000.00
April 1, 2000	3,250,000.00	6.000%	3,250,000.00
April 1, 2001	3,445,000.00	6.250%	3,445,000.00
April 1, 2002	3,660,000.00	6.500%	3,641,700.00
April 1, 2003	3,900,000.00	6.750%	3,880,500.00
April 1, 2015	74,445,000.00	7.000%	74,445,000.00
	$100,000,000.00		$99,962,200.00

The accrued interest for each bond is as follows:

TABLE 4
Bond Accrued Interest Schedule[3]

Maturity date	Principal amount	Interest rate	Accrued interest
April 1, 1996	$ 2,540,000.0 0	5.000%	$ 4,938.89
April 1, 1997	2,770,000.00	5.250%	5,655.43
April 1, 1998	2,915,000.00	5.500%	6,234.86
April 1, 1999	3,075,000.00	5.750%	6,876.04
April 1, 2000	3,250,000.00	6.000%	7,583.33
April 1, 2001	3,445,000.00	6.250%	8,373.26
April 1, 2002	3,660,000.00	6.500%	9,251.67
April 1, 2003	3,900,000.0	6.750%	10,237.50
April 1, 2015	74,445,000.00	7.000%	202,655.83
	$100,000,000.00		$261,806.81

Second, the underwriter's spread of $1,050,000.00 for all the bonds is computed. The amount is retained by the underwriter.

Third, City pays issuance costs of $50,000.00 and a bond insurance premium of $770,808.50.

Fourth, City deposits the accrued interest of $261,806.81 into the debt service fund.

Fifth, City deposits $88,716,216.50 into the construction fund and $9,375,175.00 into the reserve fund.

3 The formula used to compute accrued interest for each bond is as follows: ((Principal amount of bond *x* Interest rate)/360) *x* Number of days of accrued interest.

Thus, all the amounts raised from issuing the bonds are accounted for as follows:

TABLE 5
Accounting of Amounts Raised from Issuance of Bonds

Amount raised from issuing bonds:	$100,224,006.81	
Underwriter's discount:	$ 1,050,000.00	
Accrued interest:		261,806.81
Issuance costs:	50,000.00	
Bond insurance:		770,808.50
Construction fund:		88,716,216.50
Reserve fund:	9,375,175.00	
		$100,224,006.81

E. Actual Investment and Expenditure

Next, assume that City carries out its expectations substantially as planned following City's issuance of the bonds. Differences from City's expectations, however, occur in the construction fund and the reserve fund. All the actual amounts of investments and expenditures are determined by specifically tracing (1) amounts raised by issuing the bonds, and (2) earnings on those amounts.

In the construction fund, earnings are different than expected, and making the improvements takes longer than expected. The final expenditure for the improvements is made on May 7, 1999. The expenditures allocated to amounts in the construction fund are as follows:

TABLE 6
Date and Amount of Construction Fund Expenditures

Date	Amount
July 26, 1995	$ 6,000,000.00
November 1, 1995	7,000,000.00
February 7, 1996	8,000,000.00
March 11, 1996	12,000,000.00
June 10, 1996	20,000,000.00
November 2, 1996	11,700,000.00
March 14, 1997	9,500,000.00
April 19, 1997	4,500,000.00
July 22, 1997	3,000,000.00
December 11, 1997	3,250,000.00
April 29, 1998	2,000,000.00
September 25, 1998	1,500,000.00
March 8, 1998	500,000.00
May 7, 1999	300,000.00

The expenditures reflect payments to third parties for improvements to the water plant facility. In addition, City, in writing, allocates bond proceeds in the amount of $10,000,000.00 on May 1, 1995, to the previously incurred costs for construction materials and equipment.

In the reserve fund, earnings are also different than expected. Before completion of the improvements, earnings in the reserve fund are transferred to the construction fund. Following completion of the improvements, earnings in the reserve fund are transferred to the debt service fund as follows:

TABLE 7
Date and Amount of Reserve Fund Earnings Transferred

Date	Amount
October 1, 1999	$330,000.00
April 1, 2000	327,000.00
October 1, 2000	326,000.00
April 1, 2001	329,000.00
October 1, 2001	331,000.00
April 1, 2002	334,000.00
October 1, 2002	336,000.00
April 1, 2003	335,000.00
October 1, 2003	333,000.00
April 1, 2004	328,000.00
October 1, 2004	327,000.00

The cash flows in the construction fund and the reserve fund are net of expenses taken into account by the mutual fund and net of the broker's fees of 0.02 percent of the amount of Treasury securities purchased. The mutual fund expenses are the same for all shareholders, regardless of the source of the funds used to purchase the shares. The same broker's fee is charged to all purchasers of Treasury securities.

F. Conclusion of Facts

Thus, City expected to issue bonds, has actually issued bonds, has invested the amounts derived from the bonds, and has spent those amounts, plus the earnings, on improvements. With these facts, we can now turn to the application of the arbitrage restrictions. We will begin with the yield restriction rules and then turn to the rebate rules.

3. Application of the Yield Restriction Rules

A. In General

The yield restriction rules are the first component of the arbitrage analysis. These rules, which generally focus on reasonable expectations on the issue date, impose limits on the yield of investments. Specifically, section 148(a) defines a taxable arbitrage bond as any bond issued as part of an issue any portion of the proceeds of which are reasonably expected (at the time of issuance) to be used directly or indirectly (1) to acquire higher yielding investments, or (2) to replace funds that were used directly or indirectly to acquire higher yielding investments. Section 148(a) also states that a bond will be treated as a taxable arbitrage bond if an issuer intentionally (1) invests the proceeds of the issue in higher yielding investments, or (2) replaces funds used directly or indirectly to acquire higher yielding investments.

B. Analysis

Compliance with the yield restriction rules can be analyzed through a series of steps, as follows:

Step one: Determine whether the bonds are part of the same issue;

Step two: Review the issuer's expectations concerning the use of bond proceeds and determine whether those expectations are reasonable;

Step three: Determine the amount of gross proceeds;

Step four: Determine the allocation of gross proceeds to investments and expenditures;

Step five: Determine whether any exceptions to the yield restriction rules apply; and

Step six: If no exceptions to the yield restriction rules apply, determine the permitted spread allowed to be earned on investments over the bond yield.

Each step is discussed below.

Step one: Determine whether the bonds are part of the same issue

To begin, we must determine whether City's bonds are part of the same issue. Section 1.150-1T(c) generally treats two or more bonds as part of the same issue if the bonds are (1) sold at substantially the same time, (2) sold pursuant to the same plan of financing, and (3) reasonably expected to be paid from substantially the same source of funds. In this example, the term bond and the serial bonds are treated as part of the same issue of bonds because all the bonds (1) are sold less than 15 days apart, (2) finance only the improvements to a single water plant facility, and (3) are reasonably expected to be paid solely from revenues generated by the water plant facility.

Step two: Review the issuer's expectations concerning the use of bond proceeds and determine whether those expectations are reasonable

Now, we must review City's expectations with respect to the use of City's bond proceeds and determine whether City's expectations are reasonable. According to section 1.148-2(b)(1), the determination of whether an issue consists of arbitrage bonds under section 148(a) generally is based on the issuer's reasonable expectations as of the issue date regarding the amount and use of the gross proceeds of the issue. As explained in section 1.148-1(b), an issuer's expectations are reasonable only if a prudent person in the same circumstances as the issuer would have those same expectations, based on all the objective facts and circumstances. In addition, section 1.148-1(b) specifically lists certain factors that are relevant to a determination of reasonableness. Those factors include the issuer's history of conduct concerning stated expectations made in connection with the issuance of bonds, the level of inquiry by the issuer into factual matters, and the existence of covenants, enforceable by bondholders, that require implementation of specific expectations.

The issuer's expectations generally are documented in the arbitrage certificate. Thus, the arbitrage certificate is an important document because it states the facts and estimates that form the basis for the issuer's determination that its bonds comply with the arbitrage restrictions. Under section 1.148-2(b)(2), although the arbitrage certificate is evidence of the issuer's expectations, the arbitrage certificate has no special evidentiary significance. The certificate does not establish any conclusions of law or any presumptions regarding the issuer's actual expectations, including their reasonableness.

Nevertheless, issuers are still required to complete an arbitrage certificate in most cases.[4] In this example, the regulations require City to complete an arbitrage certificate, and City completed one. For purposes of this example, assume we have reviewed City's arbitrage certificate and have determined City's expectations to be reasonable.

Step three: Determine the amount of gross proceeds

Next, we must determine the amount of gross proceeds of City's bond issue. Although section 148(a) refers to proceeds, section 148(a) also refers to replaced funds. Section 1.148-1(b) interprets the use of the term "replace" in the definition of "gross proceeds," defining "gross proceeds" as (1) any proceeds of an issue, and (2) any replacement proceeds of an issue.

The definition of gross proceeds, which applies for all purposes of section 148, is one of the fundamental building blocks of the arbitrage restrictions because it identifies the amounts to which the rules apply. Under the regulations, both yield restriction and rebate rules apply to the same "gross proceeds." Section 1.148-2(a) provides that under section 148(a), the direct or indirect investment of the "gross proceeds" of an issue in higher yielding investments causes the bonds of the issue to be arbitrage bonds. Section 1.148-3(a) provides that section 148(f) requires certain earnings on nonpurpose investments[5] allocable to the "gross proceeds" of an issue to be paid to the United States to prevent the bonds in the issue from being arbitrage bonds. Thus, we must determine what amounts constitute the gross proceeds of City's bond issue that are subject to the arbitrage restrictions by determining (1) the amount of proceeds, and (2) the amount of any replacement proceeds of City's bond issue.

(1) Determine the Amount of Proceeds

"Proceeds" are defined in section 1.148-1(b) as any (1) sale proceeds, (2) investment proceeds, and (3) transferred proceeds of an issue. Thus, determining the amount of proceeds requires three additional steps: (1) determine the amount of sale proceeds, (2) determine the amount of investment proceeds, and (3) determine the amount of transferred proceeds.

[4] Section 1.148-2T(b)(2)(ii) provides two exceptions from the certification requirement. An issuer is not required to make a certification for an issue if (1) the issuer reasonably expects as of the issue date that there will be no unspent gross proceeds after the issue date, other than gross proceeds in a bona fide debt service fund, or (2) the issue price of the issue does not exceed $1,000,000.00.

[5] Nonpurpose investments are discussed in detail below.

(2) Determine the Amount of Sale Proceeds

Sale proceeds generally are amounts an issuer receives from a borrowing on the issue date of the bonds. Specifically, section 1.148-1(b) defines sale proceeds as any amounts actually or constructively received from the sale of the issue, including amounts used to pay the underwriters' discount or compensation and accrued interest other than pre-issuance accrued interest.[6]

In this example, the amount of sale proceeds of City's bonds includes (1) the amount of the underwriter's discount, (2) the amounts deposited in the construction fund, (3) the amounts deposited in the reserve fund, (4) the amounts paid for issuance costs, and (5) the amount paid for the term bond insurance.

(3) Determine the Amount of Investment Proceeds

Investment proceeds generally are amounts earned from the investment of bond proceeds. Specifically, section 1.148-1(b) defines investment proceeds as any amounts actually or constructively received from investing proceeds of an issue.

In this example, the amount of investment proceeds of City's bonds includes the amounts earned on the investments in (1) the reserve fund, and (2) the construction fund. The amount of investment proceeds of City's bonds also includes the amounts earned on the investment of proceeds in the debt service fund.

(4) Determine the Amount of Transferred Proceeds

Transferred proceeds generally are amounts that transfer from one bond issue to another. Under section 1.148-9(b), if proceeds of an issue (a "refunding issue") discharge any of the outstanding principal amount of a prior issue, proceeds of the prior issue transfer to the refunding issue and cease to be proceeds of the prior issue.

In this example, City's bonds are not a refunding issue. Therefore, there are no transferred proceeds because proceeds of City's bonds do not discharge any outstanding principal amount of another issue of bonds.

[6] Section 1.148-1(b) defines pre-issuance accrued interest as amounts representing interest (1) accrued on a bond for a period not greater than 1 year before its issue date, and (2) paid within 1 year after the issue date of the bond. However, the issue price of the bonds may include pre-issuance accrued interest. This concept is further explained in the discussion relating to issue price in Appendix C.

(5) Determine the Amount of Replacement Proceeds

Replacement proceeds are amounts that are treated as proceeds even though these amounts are not derived from the sale of the bonds.[7] Section 1.148-1(c) specifically defines amounts as replacement proceeds of an issue if the amounts have a sufficiently direct nexus to the issue or to the governmental purpose of the issue to conclude that the amounts would have been used for that governmental purpose if the proceeds of the issue were not used or to be used for that governmental purpose. For example, replacement proceeds arise when an issuer pledges money to pay debt service on the bonds.

In this example, the amount of replacement proceeds of City's bonds includes (1) amounts deposited in the debt service fund, other than amounts described above as proceeds, and (2) earnings on amounts described in (1). The amounts in the debt service fund are reasonably expected to be used to pay debt service on the bonds.

(6) Total Amount of Gross Proceeds

Thus, the amount of gross proceeds includes:

(1) the amount of the underwriter's discount,
(2) the amounts deposited in the construction fund,
(3) the amounts deposited in the reserve fund,
(4) the amounts paid for issuance costs,
(5) the amount paid for the term bond insurance,
(6) the amounts earned on the investments in the reserve fund,
(7) the amounts earned on the investments in the construction fund,
(8) the amounts deposited in the debt service fund, and
(9) the amounts earned on the investments in the debt service fund.

Step four: Determine the allocation of gross proceeds to investments and expenditures

Next, we must allocate the gross proceeds of City's bond issue to investments and expenditures. Once amounts of bond proceeds are allocated to an expenditure for a governmental purpose, those amounts of bond proceeds are no longer tracked for arbitrage purposes; that is, those amounts are no longer subject to the yield restriction rules.

Generally, section 1.148-6 contains the allocation and accounting rules. An issuer may use any reasonable, consistently applied accounting method to account for investments and expenditures of an issue. A reasonable accounting method, if consistently

[7] "Replacement," one of the basic "substance over form" rules in the arbitrage area, is more fully explained in the introductory article printed in the 1994 CPE Book.

applied, includes: (1) a specific tracing method, (2) a gross proceeds spent first method, (3) a first-in, first-out method, or (4) a ratable allocation method.[8] In this example, because City employs a specific tracing method and we assume City's bond issue is not abusive, City's accounting method is reasonable.

(1) Investments

First, we must identify the investments purchased with the gross proceeds of City's bond issue.

The yield restriction rules apply to "investment property." Section 148(b)(2) defines investment property to include any security, obligation, annuity contract, and "investment-type property." Section 1.148-1(b) further defines investment-type property to include other types of property that are held principally as a passive vehicle for the production of income. For example, prepayments for goods or services may qualify as investment-type property.

Section 148(b)(3) and section 1.148-2(d)(2)(v) do not treat investments in tax-exempt bonds of another issue as investment property unless the interest on the bonds is subject to the alternative minimum tax.[9] This means that issuers can avoid the yield restriction and rebate requirements altogether by investing in other tax-exempt bonds.

In this example, City used gross proceeds of the bond issue to purchase taxable mutual fund shares and Treasury securities as investments. We do not consider the land as investment-type property in this example because it is part of the improvements to the water plant facility and is not purchased for investment purposes.[10]

(2) Purpose Investments and Nonpurpose Investments

Because the regulations have different rules for "purpose investments" and "nonpurpose investments," we must determine whether City's investments are purpose investments or nonpurpose investments. Under section 1.148-1(b), a purpose investment is an investment that carries out the governmental purposes of an issue. Examples of purpose investments include a loan made to a 501(c)(3) organization with the proceeds of qualified 501(c)(3) bonds and a mortgage loan made to a homeowner with the proceeds of qualified mortgage bonds.

[8] Proposed section 1.148-6(a)(3) would impose specific tracing if an issuer failed to use a reasonable method of accounting.

[9] The interest on most types of qualified private activity bonds (section 141(e)) is subject to the alternative minimum tax.

[10] Note that, under section 148(b), land could be considered investment-type property in other situations.

Under section 1.148-1(b), a nonpurpose investment is any investment property that is not a purpose investment. A nonpurpose investment is an investment made with bond proceeds before the proceeds are spent on a governmental purpose. Consequently, it is irrelevant that the earnings on any nonpurpose investment are used for a governmental purpose.

In this example, City's investments purchased with gross proceeds of the bond issue are nonpurpose investments because those investments do not carry out the governmental purpose of the bond issue (that is, improvements to the water plant facility). Thus, we need not discuss the special rules in the regulations relating to the allocation of proceeds invested in purpose investments.

(3) Expenditures

Next, we must identify the expenditures for the governmental purpose of the bond issue made with the gross proceeds of City's bond issue. Section 1.148-6(d) contains the allocation rules relating to the allocation of gross proceeds to expenditures.

An allocation of gross proceeds of an issue to an expenditure must involve a current outlay of cash for a governmental purpose of the issue. A current outlay of cash means an outlay reasonably expected to occur not later than 5 banking days after the date the allocation of gross proceeds to the expenditure is made. In this example, because the underwriter retained the underwriter's discount at the time of sale of the bonds and because we assume City's bond issue is not abusive, we allocate gross proceeds of City's bond issue to that expenditure. In addition, we allocate gross proceeds of City's bond issue to (1) the amounts paid for issuance costs, and (2) the amount paid for the term bond insurance, because both involved a current outlay of cash and qualify as expenditures for a governmental purpose of City's bond issue.

(4) Reimbursement

Because City allocated gross proceeds to reimburse itself for prior expenditures, we must determine whether special rules that apply to reimbursements are met. Pursuant to section 1.148-6(d)(5), if any proceeds of a bond issue are used to reimburse an original expenditure that was paid before the issue date, the allocation rules of section 1.150-2 will apply. The purpose of the reimbursement allocation rules is to identify a nexus between the expenditure and the issuance of the bonds. If three primary requirements are met, a portion of the bonds will be treated as reimbursement bonds and an issuer may treat the proceeds of the reimbursement bonds as spent when the issuer allocates those proceeds to the reimbursement. Section 1.150-2(d) provides that these three primary requirements relate to (1) official intent, (2) the reimbursement period, and (3) the nature of the expenditure. In addition, section 1.150-2(h) provides anti-abuse rules relating to these three requirements.

a. Official Intent

The first requirement is official intent. The issuer must declare a reasonable intention to reimburse the original expenditure with proceeds of a borrowing.[11] Pursuant to section 1.150-2(d)(1), this declaration must be made no later than 60 days after the issuer pays the original expenditure. The regulations do not require any particular form for declaring an official intent to reimburse. The official intent, however, must be made in a reasonable form. Under section 1.150-2(e)(1), a reasonable form includes an issuer resolution, an action by an appropriate representative of the issuer, or specific legislation authorizing the bond issue for a particular project.

In addition, under section 1.150-2(e)(2), the declaration of intent generally must describe the project for which the original expenditure is paid and also must state the maximum principal amount of bonds expected to be issued for the project. A project description is sufficient if it identifies, by name and functional purpose, the fund or account from which the original expenditure is paid. Pursuant to section 1.150-2(e)(3), on the date of the declaration, the issuer's expectation that it will reimburse the original expenditure with bond proceeds also must be reasonable. Statements of official intent are not reasonable if they are routinely declared as a matter of course or are declared in amounts substantially in excess of the amounts expected to be necessary for the project. Thus, an issuer cannot make a blanket declaration at the beginning of each year stating that it plans to reimburse for all capital expenditures made during that year. Moreover, a pattern of failure to reimburse actual original expenditures covered by official intents (other than in extraordinary circumstances) is evidence of unreasonableness.

In this example, City meets the official intent requirement, and City's resolution qualifies as the declaration of intent. The costs for the construction materials and equipment were paid on February 1, 1995, and the resolution was made on March 1, 1995. Therefore, the resolution was made within 60 days after City paid the expenditures. In addition, City's resolution stated that the maximum principal amount of the bonds expected to be issued for the improvements to the water plant facility would not exceed $100,000,000.00. Moreover, City's resolution described the improvements to the water plant facility and stated that the previously paid costs were paid from the "Water Plant Facility Fund--Water Plant Facility Capital Improvement Program." As noted earlier, City's expectations on the issue date of the bonds with respect to the use of proceeds are reasonable. Accordingly, the amount of bond proceeds expected to be necessary for the

[11] Section 1.150-2(f) provides certain exceptions to these general operating rules. The first exception is a de minimis exception, and the second exception is for certain preliminary expenditures that do not exceed 20 percent of the aggregate issue price of the issues that finance or are reasonably expected to finance the project. Because these exceptions do not apply in this example, we need not review these exceptions in detail.

improvements to the water plant facility is reasonable. In addition, nothing indicates City's official intent is unreasonable.

b. Reimbursement Period

The second requirement pursuant to section 1.150-2(d)(2) is that the reimbursement allocation must be made within the reimbursement period.[12] Under section 1.150-2(c), a reimbursement allocation is a written book-keeping entry evidencing the use of bond proceeds to reimburse an original expenditure. An allocation made within 30 days after the issue date of a reimbursement bond may be treated as made on the issue date.

Under section 1.150-2(d)(2)(i), the reimbursement allocation must be made no later than 18 months after the later of (1) the date of the original expenditure, or (2) the date the project is either placed in service or abandoned. In no event, however, can the allocation be made more than 3 years after payment of the original expenditure.

In this example, City meets the reimbursement period requirement. City paid the expenses to be reimbursed on February 1, 1995, and allocated, in writing, the reimbursement expenditure to bond proceeds on May 1, 1995; that is, City made its reimbursement allocation 3 months after its expenditure. Thus, City's reimbursement allocation is made not later than 18 months after the date the original expenditure is paid. In addition, because City's allocation is made within 30 days after the issue date of the bonds, the allocation may be treated as made on the issue date. Thus, the amount of gross proceeds allocated to reimbursement is treated as spent as of the issue date if the other reimbursement requirements are met.

c. Nature of Expenditure

The third requirement pursuant to section 1.150-2(d)(3) is that the original expenditure to be reimbursed generally must be either a capital expenditure or a cost of issuance for a bond.

Under section 1.150-1(b), a capital expenditure is any cost that is properly chargeable to capital account under general federal income tax principles or would be so chargeable with a proper election. Whether an expenditure is a capital expenditure is determined at the time the expenditure is paid. Thus, subsequent changes of law do not affect whether an expenditure is a capital expenditure. In this example, City's expenditure

[12] Once again, section 1.150-2(f) provides certain exceptions to these general operating rules. The first exception is a de minimis exception, and the second exception is for certain preliminary expenditures that do not exceed 20 percent of the aggregate issue price of the issues that finance or are reasonably expected to finance the project. Because these exceptions do not apply in this example, we need not review these exceptions in detail.

was for construction materials and equipment that qualify as capital expenditures.

d. Anti-abuse Rules

Section 1.150-2(h) provides anti-abuse rules relating to reimbursement allocations. The general anti-abuse rule provides that a reimbursement allocation is not an expenditure of proceeds of an issue if the allocation employs an abusive arbitrage device to avoid the arbitrage restrictions or to avoid the restrictions under sections 142 through 147. Another anti-abuse rule is the one-year step transaction rule. A purported reimbursement allocation is invalid and, thus, is not an expenditure of proceeds of an issue if, within 1 year after the allocation, funds corresponding to the proceeds of a reimbursement bond are used in a manner that results in the creation of replacement proceeds of that issue or another issue. For purposes of this example, we assume City's reimbursement allocations are not abusive.

Accordingly, City's issue of bonds meets the three primary requirements relating to (1) official intent, (2) the reimbursement period, and (3) the nature of the expenditure. In addition, we assume the anti-abuse rules do not apply. Thus, the proceeds of City's bonds allocated to reimbursements ($10,000,000.00) are considered spent as of the issue date of the bonds.

Step five: Determine whether any exceptions to the yield restriction rules apply

Next, we must determine whether any exceptions to the yield restriction rules apply. Three of the most important exceptions are those for (1) temporary periods, (2) reasonably required reserve or replacement funds, and (3) bona fide debt service funds.

(1) Temporary Period

Pursuant to section 148(c)(1), an issuer may invest bond proceeds in higher yielding investments for a "reasonable temporary period" until the proceeds are needed for the project without causing the bonds to be arbitrage bonds.

Generally, under section 1.148-2(e)(2), net sale proceeds and investment proceeds reasonably expected to be spent for a capital project may be invested at a higher yield for 3 years from the issue date (the "3-year temporary period"), provided the issuer reasonably expects to satisfy three conditions discussed below. Generally, under section 1.148-1(b), net sale proceeds are amounts that the issuer has left from the bond issue after the issuer has made a deposit into a reasonably required reserve fund. As discussed above, under section 1.148-1(b), investment proceeds are amounts actually or constructively received from investing proceeds of an issue.

Section 1.148-2(e)(2)(i) provides three conditions that the issuer must reasonably expect to satisfy to qualify for the 3-year temporary period. The three conditions include (1) the expenditure test, (2) the time test, and (3) the due diligence test.

The *expenditure test* requires that the issuer reasonably expect to spend 85 percent of its net sale proceeds (not including investment earnings) on the capital project by the end of the 3-year temporary period. This expenditure test does not require that the issuer reasonably expect to spend all proceeds within the 3-year temporary period.

The *time test* requires that the issuer reasonably expect to incur, within 6 months of the issue date, a substantial binding obligation to a third party to spend at least 5 percent of the net sale proceeds (not including investment earnings) on the capital project. An obligation is not binding if it is subject to contingencies within the issuer's or a related party's control.

The *due diligence test* requires that the issuer reasonably expect to complete the capital project and to spend net sale proceeds (not including investment earnings) with due diligence.

In this case, the net sale proceeds and investment proceeds allocated to investments in the construction fund qualify for the 3-year temporary period because City reasonably expected to satisfy the expenditure test, the time test, and the due diligence test described above. Specifically, City (1) expected to spend 85 percent of net sale proceeds by the end of the 3-year temporary period, (2) entered into binding agreements prior to the bond issuance with third parties under which City would expend more than 5 percent of the net sale proceeds on improvements to the water plant facility, and (3) intended to proceed with due diligence to improve the water plant facility. Thus, net sale proceeds and investment proceeds allocated to investments in the construction fund are excepted from the yield restriction rules during the 3-year temporary period.[13]

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[13] In this example, City has gross proceeds in the construction fund at the end of the 3-year temporary period. Those amounts do not qualify for any exception to the yield restriction rules.

Under section 1.148-5(c), an issuer in certain instances may reduce the yield on investments by making a payment to the United States. These yield reduction payments eliminate the burden on issuers of complying with restrictions that are largely duplicative (yield restriction and rebate). In many instances, an issuer that pays rebate will also meet the yield restriction requirements under this rule. However, because this yield reduction payment rule is not exactly the same as rebate, there may be cases where an issuer that pays rebate will also be required to make additional yield reduction payments. In addition, the yield reduction payment rule only applies to certain types of issues and investments specified in the regulations. See section 1.148-5(c)(3). Most notably, the rule generally cannot be applied to advance refundings.

In this example, if City pays rebate to the United States, those payments will reduce the yield on the investments in the construction fund to equal the yield on the bonds.

(2) A Reasonably Required Reserve or Replacement Fund

Generally, pursuant to section 148(d) and section 1.148-2(f), investments in a reasonably required reserve or replacement fund may be invested in higher yielding investments without violating the yield restriction rules if the reserve or replacement fund meets a size limitation test. The source of such a fund also is subject to a financing test.

Section 148(d)(1) and section 1.148-2(f)(2) provide that a reserve or replacement fund will meet the *size limitation test* if the maximum amount of gross proceeds of the issue that qualifies as a reasonably required reserve or replacement fund does not exceed an amount equal to the least of (1) 10 percent of the stated principal amount of the issue, (2) the maximum annual principal and interest requirements on the issue, or (3) 125 percent of the average annual principal and interest requirements on the issue.[14]

Section 148(d)(2) and section 1.148-2(f)(1) provide that a reserve or replacement fund will meet the *financing test* if that fund is not financed with sale proceeds in excess of 10 percent of the stated principal amount of the issue, without regard to whether those sale proceeds are invested in higher yielding investments.[15] Although an issuer may request a ruling from the Service to permit a greater amount of sale proceeds that may be placed in the reasonably required reserve or replacement fund, in this case, City did not.

In this example, City's reserve fund qualifies as a reasonably required reserve or replacement fund because the bond documents require that the balance in the reserve fund be the least of (1) 10 percent of the bond proceeds, (2) the maximum annual debt service on the bonds, or (3) 125 percent of average annual adjusted debt service on the bonds. Thus, investment of amounts that are part of City's reserve fund are excepted from the yield restriction rules. Moreover, the reserve fund is financed with sale proceeds in an amount equal to $9,375,175.00, which is less than $10,000,000.00 (10 percent of the stated principal amount of the bond issue).

(3) A Bona Fide Debt Service Fund

Next, we must determine whether the debt service fund for City's bond issue qualifies as a bona fide debt service fund because, under section 1.148-2(e)(5)(ii), amounts in a bona fide debt service fund qualify for a 13-month temporary period. Section 1.148-1(b) defines a bona fide debt service fund as a fund that is used primarily to

[14] Under section 1.148-2(f)(2)(ii), if an issue has more than a de minimis amount of original issue discount or premium, the issue price of the issue (reduced by the amount of pre-issuance accrued interest) is used to measure the 10 percent limitation in lieu of stated principal amount.

[15] Under section 1.148-2(f)(1), if the issue has more than a de minimis amount of premium or original issue discount, the issue price of the issue (reduced by the amount of pre-issuance accrued interest) is used to measure the 10 percent limitation in lieu of stated principal amount.

achieve a proper matching of revenues with principal and interest payments within each bond year and is depleted at least once each bond year except for a reasonable carryover amount.

In this example, City's debt service fund qualifies as a bona fide debt service fund because City's bond documents require City to establish a debt service fund into which City will make monthly deposits equal to one-sixth of the next semiannual interest payment plus one-twelfth of the next annual principal payment. In addition, City must deplete this fund at least once each bond year, except for a reasonable carryover amount not to exceed the greater of (1) the earnings on the fund for the immediately preceding bond year, or (2) one-twelfth of the principal and interest payments on the issue for the immediately preceding bond year.

Thus, gross proceeds in City's debt service fund qualify for a 13-month temporary period and are excepted from the yield restriction rules during the 13-month temporary period.

Step six: If no exceptions to the yield restriction rules apply, determine the permitted spread allowed to be earned on investments over the bond yield

If the exceptions to the yield restriction rules did not apply, we would next determine the permitted spread over the bond yield allowed to be earned on investments allocated to City's issue of bonds, and we would determine the yield on City's issue of bonds. In this example, because the exceptions to the yield restriction rules apply, we need not determine the permitted spread on the investments or the yield on the issue to complete our analysis of the yield restriction rules. However, we have explained in Appendix B how to determine the permitted spread on investments, and we have explained in Appendix C how to compute yield on an issue of bonds.

C. Conclusion

City's issue of bonds meets the yield restriction rules of section 148(a). City's expectations were reasonable as of the issue date of the bonds. In addition, the exceptions to the yield restriction rules apply to all gross proceeds of City's issue of bonds except for amounts in the construction fund at the end of the 3-year temporary period for which yield reduction payments will be made. Thus, through proper planning, City was assured that its investments would be excepted from the yield restriction rules. But the yield restriction rules of section 148(a) comprise only the first component of the arbitrage analysis.

4. Application of the Rebate Rules

A. In General

The rebate rules are the second component of the arbitrage analysis. The rebate requirement is found in section 148(f). Under section 148(f), a bond is a taxable arbitrage bond unless arbitrage earnings are paid to the United States.

B. Analysis

Like compliance with the yield restriction rules, compliance with the rebate rules also can be analyzed through a series of steps, as follows:

Step one: Determine compliance with any exceptions;

Step two: Identify gross proceeds not qualifying for an exception;

Step three: Determine the computation date;

Step four: Calculate yield on the issue;

Step five: Identify the gross proceeds of the issue and nonpurpose investments to which those gross proceeds are allocated;

Step six: Create a schedule of the cash flows of the nonpurpose investments;

Step seven: Future value the cash flows; and

Step eight: Confirm timely payment.

Each step is discussed below.

Step one: Determine compliance with any exceptions

To begin, we must determine whether any exceptions to the rebate rules apply. Under the rebate rules, three types of spending exceptions are available. Certain additional exceptions not in the nature of spending exceptions simplify the application of the rebate rules.

The first spending exception is the 6-month exception under section 148(f)(4)(B). It applies if all the gross proceeds of an issue are spent within 6 months of the issue date.[16] For City's bonds, the 6-month exception is not met because City has gross proceeds in the construction fund 6 months following the issue date.

The second spending exception is the 18-month exception under section 1.148-7(d). It applies if all the gross proceeds of an issue are spent within 18 months according to a prescribed schedule.[17] For City's bonds, the 18-month exception is not met because, among other things, City has gross proceeds in the construction fund 18 months following the issue date.[18]

The third spending exception is the 2-year construction exception under section 148(f)(4)(C). It applies to certain proceeds of a construction issue if the proceeds are spent within 2 years according to a prescribed schedule. For City's bonds, the 2-year exception is not met because, among other things, City has gross proceeds in the construction fund more than 2 years after the issue date. If City had validly elected as of the issue date to pay a "penalty in lieu of rebate" under section 148(f)(4)(C)(vii), City would simply pay the penalty amount on the unspent, available construction proceeds. City, however, did not make this election.

Finally, section 148(f)(4)(A) provides that investment earnings on a bona fide debt service fund are excluded from rebate if no bond of the issue is a private activity bond, the bonds pay a fixed rate of interest, and the weighted average maturity of the bonds is at least 5 years.[19] Section 1.148-1(b) defines a "bona fide debt service fund," and as discussed above, City's debt service fund meets this definition. In addition, the debt service fund meets the exception for rebate because no bond of the issue is a private activity bond, the bonds pay fixed rates of interest, and the average maturity of the bonds exceeds 5 years.

Thus, other than the exception for the debt service fund, no other exceptions to rebate apply to City's bonds.

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[16] Under section 1.148-7(c)(3), "gross proceeds" has a special meaning for this purpose. It excludes certain amounts that are otherwise part of gross proceeds, such as amounts in a reasonably required reserve fund. In addition, section 148(f)(4)(B)(ii) provides special treatment for qualified 501(c)(3) bonds and certain governmental bonds. For qualified 501(c)(3) bonds and certain governmental bonds, the lesser of 5 percent of the proceeds of the issue or $100,000.00 can be held over for another six months if the rest is spent in the first six months.

[17] Section 1.148-7(d)(3) also applies a special definition of "gross proceeds."

[18] Although the last spending requirement can be satisfied even though the issuer has not spent all the gross proceeds as of the last spending date, the amount of unspent proceeds exceeds the permitted amount in this example.

[19] Average maturity is determined in accordance with section 147(b)(2)(A).

Step two: Identify gross proceeds not qualifying for an exception

Because some of the gross proceeds of City's bonds do not qualify for an exception to rebate, we must compute the amount of rebate for those gross proceeds. Calculating the amount of rebate generally is a six-part process. The process is described in steps three through eight.

Step three: Determine the computation date

We must first determine the computation date. It is the date for which rebate is calculated. Under section 1.148-3(e)(1), an issuer of a fixed yield issue may treat any date as a computation date. But under section 1.148-3(f)(1), the first rebate installment payment must be made for a computation date that is not later than 5 years after the issue date. Thus, the latest possible date for City's first computation date is April 15, 2000.

Step four: Calculate yield on the issue

Next, we must compute the yield on the issue. In Appendix C, we computed the yield for City's issue of bonds. Under section 1.148-4(a), yield is determined the same way for both the yield restriction rules and the rebate rules, with a few exceptions that do not apply here. Thus, the yield on City's issue of bonds is 7.001 percent.

Step five: Identify the gross proceeds of the issue and nonpurpose investments to which those gross proceeds are allocated

We then must allocate gross proceeds of the issue to nonpurpose investments. We addressed allocations in the discussion of the yield restriction rules but now need to expand upon that discussion.

Section 1.148-6 addresses allocation and accounting rules. Under section 1.148-6(a)(1), an issuer may use any reasonable, consistently applied accounting method to account for gross proceeds, investments, and expenditures.[20] For City's bonds, gross proceeds are specifically traced to investments and expenditures.

As discussed above, the gross proceeds of City's issue are represented by investments in the construction fund and the reserve fund. Once the amounts are allocated to an expenditure, they are no longer tracked for rebate purposes. Under section 1.148-6(d)(1)(ii), an allocation of gross proceeds to an expenditure must involve a current outlay of cash for a governmental purpose of the issue. For City's bonds, the gross proceeds in the construction fund allocated to expenditures are considered spent because the

[20] Proposed section 1.148-6(a)(3) would impose specific tracing if an issuer failed to use a reasonable method of accounting.

expenditures to which the proceeds are allocated reflect cash payments to third parties for improvements to the water plant facility. Thus, the relevant nonpurpose investments are those nonpurpose investments in the construction fund and the reserve fund, and those investments must be tracked until the time they are expended.

Step six: Create a schedule of the cash flows of the nonpurpose investments

Next, we must create a schedule of the cash flows of those nonpurpose investments. The cash flows are shown as either payments or receipts. Generally, payments are amounts paid for an investment, such as the purchase price. Generally, receipts are amounts received from an investment such as earnings. Payments are shown as negative amounts, and receipts are shown as positive amounts.

If an investment is sold and another is repurchased on the same day for the same amount (a "reinvestment"), the receipt for the old investment and the payment for the new investment would cancel each other because one is a positive amount and the other is a negative amount. For example, if an investment is bought for $3.00, it matures at $5.00, and that $5.00 is reinvested for a return of $7.00, the only relevant cash flows are the initial purchase price of $3.00 and the ultimate receipt of $7.00. This is because the two $5.00 amounts cancel each other, as one is a receipt and the other is a payment on the same day. The same is true if earnings in the reserve fund are transferred to the construction fund and invested in that fund. Thus, for City's bonds, we need to know the initial payments and the ultimate receipts but not the interim payments and receipts associated with reinvestments nor the transfers from the reserve fund to the construction fund.

City has two types of payments. First, under section 1.148-3(d)(1)(i), payments on nonpurpose investments include the amounts paid for investments. Thus, the amounts paid on April 15, 1995, for investments in the construction fund and the reserve fund are payments. Second, under section 1.148-3(d)(1)(iv), payments on nonpurpose investments include a computation date credit of $1,000.00. A credit is treated as a payment on the last day of each bond year during which there are amounts allocated to gross proceeds of an issue that are subject to the rebate requirement. Thus, for City, there are 5 computation date credits, one for each bond year from the issue date (April 15, 1995) to the first computation date (April 15, 2000).

City has two types of receipts. First, under section 1.148-3(d)(2)(i), the receipts on nonpurpose investments include amounts actually received from the nonpurpose investments. For example, the earnings on investments in the reserve fund are receipts. Second, under section 1.148-3(d)(2)(iii), the receipts on nonpurpose investments include the value of the nonpurpose investments held in the reserve fund as of the computation date. For purposes of this example, assume the value of the reserve fund on April 15, 2000, is $9,402,341.67.[21]

Finally, under section 1.148-5(e), qualified administrative costs are taken into account in determining the payments and receipts on a nonpurpose investment. Qualified administrative costs are reasonable, direct administrative costs, other than carrying costs, such as separately stated brokerage or selling commissions, but not legal and accounting fees, recordkeeping, custody, and similar costs. Under section 1.148-5(e)(2), administrative costs are not reasonable unless they are comparable to administrative costs that would be charged for the same investment or a reasonably comparable investment if acquired with funds other than gross proceeds of tax-exempt bonds.

City's earnings on its investments in the mutual fund were reduced by expenses of the mutual fund. Because the mutual fund is widely held and the expenses charged to City are also charged to every other investor in the fund, we conclude that the expenses of the mutual fund are qualified administrative costs. City's earnings on the Treasury securities were reduced by broker's fees. Because the fees reflect a reasonable charge that is charged to other investors that are not purchasing the Treasury securities with proceeds of tax-exempt bonds, the broker's fees are also qualified administrative costs. Thus, the payments and receipts from the mutual fund shares and the Treasury securities take into account the expenses of the mutual fund and the broker's fees.

Thus, the schedule of nonpurpose payments and nonpurpose receipts, as of the first computation date, is as follows:

[21] Under section 1.148-1(b), "value" means value determined under section 1.148-5(d) for an investment.

TABLE 8
Nonpurpose Payments and Nonpurpose Receipts

Date	Payment	Receipt	Notes
April 15, 1995	($88,716,216.50)		1
April 15, 1995	(9,375,175.00)		2
April 15, 2000		$ 9,402,341.67	3
April 15, 1996	(1,000.00)		4
April 15, 1997	(1,000.00)		4
April 15, 1998	(1,000.00)		4
April 15, 1999	(1,000.00)		4
April 15, 2000	(1,000.00)		4
April 15, 1995		10,000,000.00	5
July 26, 1995		6,000,000.00	6
Nov. 1, 1995		7,000,000.00	6
Feb. 7, 1996		8,000,000.00	6
March 11, 1996		12,000,000.00	6
June 10, 1996		20,000,000.00	6
Nov. 2, 1996		11,000,000.00	6
March 14, 1997		9,500,000.00	6
April 19, 1997		4,500,000.00	6
July 22, 1997		3,000,000.00	6
Dec. 11, 1997		3,250,000.00	6
April 29, 1998		2,000,000.00	6
Sep. 25, 1998		1,500,000.00	6
March 8, 1998		500,000.00	6
May 7, 1999		300,000.00	6
Oct. 1, 1999		330,000.00	7
April 1, 2000		327,000.00	7
	($98,096,391.50)	$109,309,341.67	

Explanation of notes:
1. This shows the initial deposit to the construction fund.
2. This shows the initial deposit to the reserve fund.
3. This shows the value of the reserve fund on April 15, 2000.
4. This is a computation credit.
5. This shows the reimbursement.
6. This shows a draw from the construction fund.
7. This shows earnings on the reserve fund that are transferred to the debt service fund.

Step seven: Future value the cash flows.

Next, we compute the future value of the payments and receipts as of the computation date.[22] Those amounts are then netted against each other, and the net amount is the rebate amount.

For City's bonds, the future value of the nonpurpose receipts over the future value of the nonpurpose payments as of April 15, 2000, the first computation date, is $661,381.57, computed as follows:

[22] The future value is computed using the yield on the issue as the compounding rate, based on the same financial conventions and day count method used to compute that yield.

TABLE 9
Future Value of Nonpurpose Receipts
Over Future Value of Nonpurpose Payments

[Table not displayed here - see EO CPE Textbook]

Thus, in this example, the rebate amount as of April 15, 2000, is $661,381.57.

Step eight: Confirm timely payment.

(1) Interim Computation Date

The last step requires confirming the timely payment of rebate. Except for the final payment, the amount of each required installment payment is 90 percent of the total rebate amount as of that date. Under section 1.148-3(g), each rebate installment is required to be paid no later than 60 days after the installment computation date to which it relates. A payment made within this 60-day period is treated as paid on the computation date to which it relates.

Assume City pays $595,243.41 (90 percent of $661,381.57) of rebate on May 1, 2000. This amount is treated as paid on April 15, 2000, because it is paid within 60 days after that date. Thus, City has complied with the rebate rules so far.[23]

(2) Final Computation Date

Now assume City calls all the outstanding bonds on October 1, 2004, selling investments in the reserve fund to redeem a portion of the bonds. Under section 1.148-3(e)(2), the redemption date is the final computation date and rebate must be computed as of this date.

Generally, the payments and receipts for the final computation period are the same as those from the interim computation, except for a few additional items. First, the receipts reflect earnings after the first computation date. Second, under section 1.148-3(d)(1)(iii), the value as of the first computation date of the reserve fund is shown as a payment.[24] Third, the receipts reflect the sale of the investments in the reserve fund at the redemption of the bonds. Fourth, additional computation credits are shown.

[23] Under section 148(f)(7) and section 1.148-3(h), an issuer that fails to pay rebate when required for a reason other than willful neglect may pay a penalty in lieu of loss of tax-exemption for interest on the bonds.

[24] This payment offsets the receipt showing the value as of the first computation date of the reserve fund, and thus the payment and the receipt offset each other. Because they offset each other, neither the payment nor the receipt is shown in Table 10.

The future value of the nonpurpose receipts over the future value of the nonpurpose payments as of October 1, 2004, the final computation date, is $919,559.26, computed as follows:[25]

TABLE 10
Future Value of Nonpurpose Receipts Over Future Value of Nonpurpose Payments

[Table not displayed here - see CPE Textbook]

Under section 1.148-3(f)(3), the earlier rebate payment of $595,243.41 is future valued to October 1, 2004, at the bond yield and equals $809,122.80. Thus, the final amount of rebate owed is $110,436.46 ($919,559.26 less $809,122.80). This amount must be paid within 60 days after October 1, 2004.

5. Conclusion

Provided City pays the final rebate amount in a timely manner, the rebate rules will be met for City's issue. As concluded above, City's issue also will meet the yield restriction rules. Thus, both sets of rules will be met. Although the rules share the same purpose of removing the incentive for arbitrage motivated transactions, the two sets of rules apply differently, as shown above. For City's bonds, this incentive should be removed because City is generally left with earnings at the bond yield after application of both rules. Whether and how this conclusion would be reached in other situations such as a working capital financing or a refunding issue or in transactions where an exception to rebate is met may be explored in future articles.

[25] For an alternative method of computing the final rebate, see Appendix D.

APPENDIX A

NEW ISSUE□BOOK ENTRY ONLY

In the opinion of X, Bond Counsel, based upon an analysis of existing laws, regulations, rulings and court decisions and assuming, among other matters, compliance with certain covenants, interest on the Bonds is excluded from gross income for federal income tax purposes and is exempt from State of Y personal income taxes. In the opinion of Bond Counsel, interest on the Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although Bond Counsel observes that such interest is included in adjusted current earnings in calculating federal corporate alternative minimum taxable income. Bond Counsel expresses no opinion regarding any other tax consequences caused by the ownership or disposition of, or the accrual or receipt of interest on, the Bonds. See "TAX MATTERS" herein.

$100,000,000
CITY OF Z
(W COUNTY, STATE OF Y)
WATER PLANT FACILITY IMPROVEMENT REVENUE BONDS

Dated: April 1, 1995 **Due: April 1, as shown below**

The Bonds are being issued by City of Z, State of Y, (the "City") to provide funds to finance a portion of the costs of improvements to the water conveyance of City's Water Plant Facility, to fund a deposit to the Bond Reserve Fund and to pay costs of issuance of the Bonds, as more fully described herein. See "THE IMPROVEMENTS" herein.

Interest on the Bonds is payable on October 1, 1995, and semiannually thereafter on October 1 and April 1 of each year. Principal is payable on the dates set forth below. The Bonds are being issued in fully registered form and will be registered in the name of A Nominee, as nominee of B Trust Company, New York, New York ("B"). B will act as securities depository of the Bonds. Individual purchases of interests in the Bonds will be made in book-entry form only, in the principal amount of $5,000 or any integral multiple thereof. Purchasers of such interests will not receive certificates representing their interests in the Bonds. Principal of and interest on the Bonds are payable directly by C, as trustee (the "Trustee"), to B, which is obligated in turn to remit such principal and interest to B Participants for subsequent disbursement to the Beneficial Owners of the Bonds, as described herein. See "BOOK-ENTRY SYSTEM" herein.

The Bonds are subject to redemption as described herein.

Payment of the principal of and the interest on the Term Bond when due will be guaranteed by a municipal bond insurance policy to be issued simultaneously with the delivery of the Term Bond by D.

The Bonds are special obligations of the City, payable solely from Net Revenues of the Water Plant Facility and are secured by a pledge of Revenues; provided, however, that out of Revenues first there shall be applied all sums required for the payment of Maintenance and Operation Costs. The Bonds are issued on a parity with the City's Bonds and other Parity Debt, heretofore or hereafter issued, as more fully described herein. Neither the credit nor taxing power of the City is pledged to the payment of the principal of or the interest on the Bonds.

Maturity Schedule
$25,555,000 Serial Bonds

Maturity Date (April 1)	Principal Amount	Interest Rate	Price or Yield
1996	$2,540,000	5.00%	100 %
1997	2,770,000	5.25	100
1998	2,915,000	5.50	100
1999	3,075,000	5.75	100
2000	3,250,000	6.00	100
2001	3,445,000	6.25	100
2002	3,660,000	6.50	6.636
2003	3,900,000	6.75	6.875

$74,445,000 7.0% Term Bond due April 1, 2015
Price 100%

This cover page contains certain information for general reference only. It is not intended to be a summary of the security for or the terms of the Bonds. Investors are advised to read the entire Official Statement to obtain information essential to the making of an informed investment decision. Capitalized terms used on this cover page not otherwise defined shall have the meanings set forth herein.

The Bonds will be offered when, as and if issued and received by the Underwriters, subject to the approval of validity by X, Bond Counsel. Certain legal matters will be passed on for the City by Law Firm 1. Certain legal matters will be passed upon for the Underwriters by their counsel, Law Firm 2. It is anticipated that the Bonds, in book-entry form, will be available for delivery to B in New York, New York on or about April 15, 1995.

Underwriting Firm

Dated: March 15, 1995

APPENDIX B

Determining the permitted spread allowed to be earned on investments

Because section 148(a) prohibits only investment at a "materially higher" yield, the arbitrage regulations do not require investments to be restricted to exactly the yield on the issue of bonds.[26] Under section 1.148-2(d)(2)(i), for most types of investments of bond proceeds, "materially higher" means one-eighth of one percentage point (0.125 percent).[27]

The yield restriction rules apply to classes of investments. Under section 1.148-5(b)(2) generally all investments within a class are treated as a single investment. Section 1.148-5(b)(2)(ii) broadly defines the classes of investments as (1) each category of yield restricted purpose investments and program investments subject to a different definition of materially higher, (2) yield restricted nonpurpose investments, and (3) all other nonpurpose investments.

Pursuant to section 1.148-5(b)(2)(i), in determining the yield on a class of investments, the yield on each individual investment within the class is blended with the yield on other investments within the class, even if held at different times, by treating those investments as a single investment. The yields on investments that are not within the same class, however, cannot be blended. In addition, amounts that can be invested at an unrestricted yield (such as amounts qualifying for a temporary period) cannot be blended with yield restricted amounts.[28]

In this example, the classes of investments are (1) yield restricted nonpurpose investments that are in the construction fund after expiration of the applicable temporary period, and (2) all other nonpurpose investments that are in (a) the debt service fund, (b) the reserve fund, or (c) the construction fund before expiration of the applicable temporary period.

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[26] Note that the yield on the investments is compared to the yield on the issue of bonds and not to the yield of a particular bond that is part of the issue of bonds.

[27] Section 1.148-2(d)(2)(ii) provides stricter rules for refunding escrows and replacement proceeds. Section 1.148-2(d)(2)(iii) and (iv) provide more lenient rules for program investments.

[28] Under section 1.148-2(h), an issuer may waive its right to invest funds at unrestricted yield. Consequently, for yield blending purposes, an issuer may be able to expand the class of yield restricted investments.

APPENDIX C

Computing the yield on an issue of bonds

Section 1.148-4 provides rules for determining the yield on an issue. Different rules apply to fixed yield issues and variable yield issues.[29] Thus, initially, we must determine whether City's bonds comprise a fixed yield issue.

Pursuant to section 1.148-1(b), a fixed yield issue has a yield that is fixed and determinable on the date of issue, taking into account certain assumptions provided in the regulations. City's issue of bonds is a fixed yield issue because each bond has a fixed yield (albeit different from one another) on the issue date. Section 1.148-4(b)(1) generally provides that for a fixed yield issue the yield is determined once on the issue date and subsequent unexpected events do not change the yield on the issue. The regulations identify certain cases, however, where events can significantly distort yield, such as an early redemption of bonds issued at a significant discount or premium. The regulations provide special rules to deal with these cases. City's issue of bonds in this example is not issued at a significant discount or premium, and thus those rules do not apply.

Section 1.148-4(b)(1) provides that the yield on a fixed yield issue is the discount rate that, when used in computing present value as of the issue date of all unconditionally payable payments of principal, interest, and fees for qualified guarantees and amounts reasonably expected to be paid as fees for qualified guarantees, produces an amount equal to the present value, using the same discount rate, of the aggregate issue price of bonds of the issue as of the issue date.

Thus, to calculate the yield on City's bonds we must first determine (1) issue date, (2) amounts of principal and interest, (3) issue price, (4) fees for qualified guarantees, (5) counting conventions, and (6) compounding intervals. These determinations are based on certain information, as discussed below, that may be obtained from the bond documents, including the official statement. After making these determinations, the next step is to calculate the discount rate.

<u>Step one:</u> <u>Determine issue date</u>

Section 1.150-1(b) states that the issue date means, in reference to an issue, the first date on which the issuer receives the purchase price in exchange for delivery of the evidence of indebtedness representing any bond included in the issue. Issue date means, in reference to a bond, the date on which the issuer receives the purchase price in exchange for that bond. In no event is the issue date earlier than the first day on which

[29] Under section 1.148-4(a), the yield on an issue of bonds generally is used both to apply the investment yield restrictions under section 148(a) and to compute rebate liability under section 148(f).

interest begins to accrue on the bonds for federal income tax purposes.

In this example, the bonds were exchanged for the purchase price on April 15, 1995. April 15, 1995, is not earlier than the first day on which interest begins to accrue on City's bonds for federal income tax purposes. Thus, the issue date of City's issue of bonds is April 15, 1995.

Step two: Determine amounts of principal and interest

From information contained in the bond documents, we can determine amounts of principal and interest payable with respect to City's issue of bonds, enabling us to construct a debt service schedule (a schedule outlining the dates and amounts of unconditionally payable payments of principal and interest).

For a term bond with mandatory sinking fund redemption provisions, special rules apply in determining the dates and amounts of principal and interest. Pursuant to section 1.148-4(b)(2)(ii), if substantially identical bonds of an issue are subject to specified mandatory redemptions before the final maturity (for example, a mandatory sinking fund redemption requirement), the yield on that issue is computed by treating those bonds as redeemed in accordance with the redemption schedule for an amount equal to their value. Generally, bonds are substantially identical if the stated interest rate, maturity, and payment dates are the same. However, if the stated redemption price at maturity of the bond that is subject to specified mandatory redemptions does not exceed the issue price of that bond by more than one-fourth of 1 percent (0.25 percent) multiplied by the product of the stated redemption price at maturity and the number of years to the weighted average maturity date of the substantially identical bonds, each of the bonds must be treated as redeemed at its outstanding stated principal amount, plus accrued, unpaid interest.

In this example, the term bond is subject to specified mandatory sinking fund redemption requirements and, thus, is treated as redeemed in accordance with its redemption schedule. Moreover, because the stated redemption price at maturity of the term bond, that is the principal amount to be paid at maturity ($74,445,000.00), does not exceed the issue price of the term bond ($74,647,655.83)[30], the term bond is treated as redeemed for an amount equal to its outstanding stated principal amount, plus accrued, unpaid interest.

[30] This amount is taken from Table C-2.

The debt service schedule we have constructed for City's bond issue is as follows:

TABLE C-1
Debt Service Schedule[31]

[Table not displayed here – see EO CPE Textbook]

Step three: Determine issue price for each maturity of bonds

Section 148(h) provides that for purposes of the arbitrage yield restriction and rebate rules, the yield on an issue is determined on the basis of issue price (within the meaning of sections 1273 and 1274). In addition, section 1.148-1(b) defines "issue price" by reference to sections 1273 and 1274.

Section 1273 provides that for any issue of publicly offered bonds, not issued for property, the issue price is the initial offering price to the public (excluding bond houses and brokers) at which a substantial amount of such bonds was sold.[32] Section 1.148-1(b) defines a substantial amount as 10 percent.

The issue price of bonds does not change if part of the issue is later sold at a different price. Under section 1.148-1(b), the issue price of bonds for which a bona fide public offering is made is determined as of the sale date based on reasonable expectations regarding the initial public offering price. Section 1.150-1T(c)(6) defines "sale date" as the first day on which there is a binding contract in writing for the sale or exchange of the bond.

In this example, the issue price of City's issue of bonds will include pre-issuance accrued interest. The issue price for each maturity of bonds is as follows:

[31] Note that the principal amounts for the dates April 1, 1996, through April 1, 2003, are amounts of principal due on the serial bonds. See Table 2. The principal amounts for the dates April 1, 2004, through April 1, 2015, are amounts of principal due on the term bond. See Table 1.

Note also that the annual debt service payments are generally level.

[32] Pursuant to section 1.1273-2(m), if a bond meets certain requirements, the bond's issue price may be reduced by the amount of pre-issuance accrued interest. If the issue price of the bond is reduced in this manner, a portion of the stated interest payable on the first payment date must be treated as a return of the excluded pre-issuance accrued interest, rather than as an amount payable on the instrument. The requirements are met if (1) a portion of the initial purchase price of the bond is allocable to interest that has accrued before the issue date (pre-issuance accrued interest), and (2) the bond provides for a payment of stated interest on the first payment date within 1 year of the issue date that equals or exceeds the amount of the pre-issuance accrued interest.

TABLE C-2
Bond Issue Price[33]

[Table not displayed here - see EO CPE Textbook]

Step four: Determine fees for a qualified guarantee

Pursuant to section 1.148-4(f), fees for a qualified guarantee (for example, a premium for bond insurance) may be treated as additional interest on the guaranteed issue of bonds. One important requirement is that the issuer must reasonably expect that the guarantee will result in interest rate savings. The regulations specifically provide that the issuer must reasonably expect that the present value of the fees for the guarantee will be less than the present value of the expected interest savings on the issue as a result of the guarantee. The yield on the issue, determined with regard to the guarantee payments, is used to compute present value. Another important requirement is that the guarantee must be a guarantee in substance; that is, the guarantee must be a secondary liability, and credit risk must be transferred to the guarantor. In addition, fees for the guarantee must not exceed a reasonable, arm's-length charge for the transfer of credit risk. These rules are set forth in sections 1.148-4(f)(2), (3) and (4). Also note Rev. Rul. 94-42, 1994-2 C.B. 15, in which amounts paid or accrued under an agreement for defaulted interest were not treated as additional interest.

For purposes of this example, we assume (1) City's expectations that interest savings on the issue would result from the guarantee are reasonable, (2) the guarantee is a guarantee in substance, and (3) the fees for the guarantee do not exceed a reasonable, arm's-length charge for the transfer of credit risk. Based on these assumptions, the term bond insurance purchased by City will qualify as a qualified guarantee. Thus, $770,808.50 represents an amount paid for a qualified guarantee, and we treat this amount as additional interest on City's bond issue for purposes of the yield restriction rules.

Step five: Determine counting conventions

Under section 1.148-4(a), the 30/360 counting convention is permitted to determine yield, provided that the 30/360 convention is used consistently. In this example, we use the 30/360 convention.

[33] Note that the issue price for each bond is the sum of the prices for each bond in Table 3 and accrued interest for each bond in Table 4.

Step six: Determine compounding intervals

The compounding interval used in computing the yield on, and the present value of, a bond is the compounding interval used with respect to each bond that is part of the issue. Under section 1.148-4(a), the compounding interval used in computing the yield on an issue is any compounding interval of not more than 1 year that is used with respect to each bond that is part of the issue. In this example, we use semiannual compounding.

Step seven: Calculate the discount rate

In this case, the discount rate that produces the same present value when used in computing the present value of all the payments paid and to be paid with respect to the bonds (that is, the retirement price, stated interest payments, and those payments representing fees for a qualified guarantee that are treated as additional interest) and the present value of all the issue prices of the issue of bonds ($100,224,006.81) as of the date of issue (April 15, 1995) is 7.001 percent, computed as follows:

TABLE C-3
Computation of Yield

[Table not displayed here - see EO CPE Textbook]

Thus, the yield on City's issue of bonds is 7.001 percent.

APPENDIX D

Alternative method of computing final rebate

Under this method, the interim rebate amount is treated as a receipt if it is a positive number. This works because that interim rebate amount is the sum of the future values of all receipts and payments up to the interim computation date. Thus, by future valuing the interim rebate amount to the final computation date, we are in effect future valuing all the receipts and payments used to compute the interim rebate amount. This shortens the final rebate computation. Similarly, a negative interim rebate amount would be treated as a payment and, likewise, future valued.

TABLE D-1
An Alternative Method of Computing Final Rebate

[Table not displayed here – see EO CPE Textbook]